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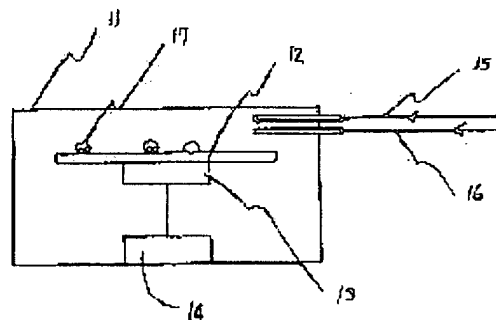
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(54) ANALYSIS OF IMPURITIES ON SURFACE OF SEMICONDUCTOR SUBSTRATE

(57)Abstract:

PURPOSE: To analyze impurities on the surface of a semiconductor substrate with high sensitivity and high accuracy.

CONSTITUTION: An HF aq. soln. or HF vapor is supplied from a line 15 while an O₃ aq. soln. or O₃ gas is supplied from a line 16 to form an HF/O₃ dissolving soln. 17 on the surface of a semiconductor substrate 12 and this semiconductor substrate 12 is subjected to rotary motion by a drive mechanism 14 to allow the dissolving soln. 17 to tumble on the surface of the semiconductor substrate 12. The impurities present on the surface of the semiconductor substrate 12 are dissolved in the dissolving soln. 17. This dissolving soln. 17 is collected by a pipette to be analyzed by a flameless atomic absorption device. By adding HF and O₃ to the dissolving soln. 17, an oxidation film is efficiently formed on the surface of the semiconductor substrate 12 by the oxidizing force of O₃ and the impurities on the surface of the semiconductor substrate are taken in the oxidation film. Thereafter, since the oxidation film is dissolved by the dissolving force of HF without etching the semiconductor substrate 12, the kind and amt. of the impurities bonded to the surface of the semiconductor substrate 12 can be measured with high sensitivity and high accuracy.



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